Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Service Rules for the 746-764 and	)	WT Docket No. 99-168
776-794 MHz Bands, and	)	
Revision to Part 27 of the	)	
Commission's Rules	)	

REPLY COMMENTS OF USA DIGITAL RADIO, INC.

USA Digital Radio, Inc. ("USADR"), by its attorneys, hereby files these reply comments in the above-referenced proceeding. In these reply comments, USADR addresses only the Comments of the Consumer Electronics Manufacturers Association ("CEMA")[1] which seek to have the 746-764 MHz and 776-794 MHz bands allocated for a new Mobile Multimedia Broadcast Service ("MMBS"). As is explained in greater detail below, upgrading existing AM and FM broadcasting to digital will provide the public with the performance CEMA promotes. Therefore, it is unnecessary for the Commission to establish a new broadcast service, and it would be a waste of resources for the Commission to consider allocation of these frequencies for this purpose.

A. Background

USADR is the inventor of In-Band On-Channel ("IBOC") Digital Audio Broadcasting ("DAB") technology which will permit the upgrade of existing analog broadcasting to digital using the spectrum currently allocated for FM broadcasting. On October 7, 1998, USADR submitted to

[1] Comments of the Consumer Electronics Manufacturers Association in WT Docket No. 99-168 dated July 19, 1999 ("CEMA Comments").

the Commission a Petition for Rulemaking asking the Commission to adopt rules to permit the introduction of IBOC DAB.[2] That Petition remains pending before the Commission.[3]

Since it was established in 1991, USADR's goal has been to create a system that will allow existing broadcasters and listeners to upgrade to digital without the need for new spectrum allocations and without dramatic increases in the cost of transmitting and receiving equipment. The use of IBOC technology has allowed USADR to meet those goals. Because IBOC will permit the introduction of digital radio in the existing broadcasting bands, there will be no need for new spectrum allocations or cumbersome regulatory proceedings to identify new digital spectrum or award digital licenses. Moreover, IBOC DAB will allow stations to retain much of their existing studio and transmission equipment. Because IBOC DAB will allow stations to support both analog and digital broadcasting, existing analog radios will remain useful as consumers acquire DAB receivers in the normal course of equipment replacement cycles. Moreover, USADR projects that DAB receivers will be only incrementally more expensive than analog receivers.

IBOC DAB will significantly enhance the listening experience for AM and FM radio and will provide the multimedia experience CEMA seeks to create with the MMBS. USADR's FM system will provide near CD-quality sound. The AM system will supply an audio fidelity matching today's FM. In addition to enhanced audio fidelity, IBOC DAB will improve sound quality through additional robustness of the digital signal. This improved robustness will translate to increased resistance to multipath interference, noise and interference from grounded conductive structures.

---

2 *Amendment of Part 73 of the Commission's Rules to Permit the Introduction of Digital Audio Broadcasting in the AM and FM Broadcast Services*, RM-9395, *Petition for Rulemaking* (dated Oct.7, 1998) ("USADR Petition").

3 *See Public Notice*, RM-9395 (rel. Nov. 6, 1998).

Listeners will perceive greatly enhanced overall quality to increase their enjoyment from radio broadcasting. IBOC DAB will also provide capacity for auxiliary services which will upgrade existing subcarrier services. These auxiliary services could include many of the datacasting services referred to in CEMA's comments.

Prototype IBOC DAB systems were tested in 1995 in both the AM and FM bands. In the fourth quarter of 1998, 12 of the largest broadcasters in the United States invested in USADR. Subsequently, USADR has announced strategic agreements with 3 transmitter manufacturers[4] and with Kenwood Corporation, one of the largest manufacturers of radio receivers for the U.S. market. Earlier this year, USADR introduced its EASE program, an early adopter program which will allow all radio broadcasters in the United States to participate in the transition to IBOC DAB. More than 500 stations broadcasters have registered to participate in the EASE program. Many of those stations are from small, non-Arbitron rated markets. Most recently, USADR announced a joint commercialization agreement with Texas Instruments whereby TI will integrate USADR's software with TI's programmable digital signal processors.

USADR currently is field-testing its second generation FM system in Columbia, Maryland and at WPOC (FM) in Baltimore, Maryland. The AM system is being field-tested in Cincinnati, Ohio. In addition, USADR will field test its system at more than ten locations around the country before the end of the year. Based on its existing schedule, USADR anticipates that preproduction systems will be operational beginning in early 2000, with commencement of commercial service later that year.

---

[4] USADR was entered into joint technology and marketing agreements with Nautel Limited, QEI Corporation, and Broadcast Electronics, Inc.

B. IBOC DAB Will Address the Needs Identified by CEMA

USADR's IBOC DAB technology will provide many of the benefits CEMA associates with the MMBS without the need for new spectrum allocations or the creation of a new broadcast service. For instance, USADR's system will permit existing broadcasters to provide listeners with robust reception in a mobile environment. A listener will be able to drive in the city or the country and not be subjected to signal outages or interference inherent in today's AM/FM radio broadcast system. To do this, USADR's system incorporates similar orthogonal frequency division multiplexing technology to that referred to by CEMA as well as sophisticated coding techniques. Likewise, the USADR system will provide a sound quality similar to that provided by CDs. The USADR system's all-digital mode will support the capabilities CEMA discusses. In support of its proposal, CEMA states that the MMBS could provide higher than CD quality sound. CEMA, however, provides no evidence that listeners in a mobile environment desire that level of sound fidelity. Most mobile listening takes place in a car or through the use of personal/portable radios. In those cases, the background noise inherent in the listening environment makes it unlikely that listeners would be able to hear a qualitative improvement over the quality provided by USADR's IBOC DAB.

CEMA's questions about IBOC DAB's ability to provide robust, CD quality sound in a mobile environment are based on CEMA's views of prototype systems field tested four years ago.[5] USADR's current system is completely different than any system tested four years ago. USADR is confident both CEMA and the Commission will be impressed by the quality and robustness that its system can offer.

---

[5] *See* CEMA Comments at 4, n.2.

Finally, the USADR system like the CEMA proposal will also support auxiliary services which can be used for many of the datacasting services CEMA touts.

Because IBOC DAB will provide the multimedia listening experience CEMA hopes to achieve, USADR submits it is unnecessary for the Commission to devote resources to this proposal or to consider allocation of spectrum in the former UHF television bands for this purpose. It would be a more efficient use of the Commission's resources to concentrate on implementation of IBOC DAB, which provides a more spectrally efficient means of addressing the public desire for digital sound, without the need for construction of a costly new national infrastructure. Any consideration of MMBS should be deferred until CEMA is able to demonstrate a need which will not be met by less costly and more efficient means.

C. Conclusion

For the foregoing reasons, USADR encourages the Commission to pursue other alternatives for use of the UHF television channels being considered in this proceeding and to promote the implementation of multimedia listening capabilities through the prompt authorization of IBOC DAB.

Respectfully submitted,

Robert A. Mazer
Albert Shuldiner
Vinson & Elkins L.L.P.
1455 Pennsylvania Avenue, N.W.
Washington, DC 20004-1008
(202) 639-6500

Counsel for USA Digital Radio, Inc.

Dated: August 13, 1999

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 13th day of August, 1999, a true and correct copy of the foregoing Reply Comments of USA Digital Radio, Inc. was served by first class mail, postage prepaid, upon the following:

Gary S. Klein
Vice President
Governmental & Legal Affairs
Consumer Electronics Manufacturers Association
2500 Wilson Boulevard
Arlington, VA 22201

George R. Borsari, Jr.
Borsari & Paxson
2021 L Street, NW, Suite 402
Washington, D.C. 20036

Charles R. Naftalin
Koteen & Naftalin, L.L.P.
1150 Connecticut Avenue, NW
Suite 1000
Washington, D.C. 20036

Raul R. Rodriguez
Leventhal, Senter & Lerman, P.L.L.C.
2000 K Street, NW
Suite 600
Washington, D.C. 20006

Martin W. Bercovici
Keller and Heckman LLP
1001 G Street, NW
Suite 500 West
Washington, D.C. 20001

Betsy Stover Granger
Pacific Bell Mobile Services
4420 Rosewood Drive, 4th Floor
Pleasanton, CA 94588

Robert M. Gurss
Wilkes, Artis, Hedrick & Lane, Chartered
1666 K Street, NW, Suite 1100
Washington, D.C. 20006

Mark E. Crosby
Laura L. Smith
Industrial Telecommunications Association
1110 N. Glebe Road, Suite 500
Arlington, VA 22201

Christine E. Enemark
Covington & Burling
1201 Pennsylvania Avenue, NW
Washington, D.C. 20044

Pamela J. Riley
AirTouch Communications, Inc.
1818 N Street, NW, Suite 800
Washington, D.C. 20036

Jill Lyon
American Mobile Telecommunications Association, Inc.
1150 18th Street, NW, Suite 250
Washington, D.C. 20036

Carole C. Harris
McDermott, Will & Emery
600 13th Street, NW
Washington, D.C. 20005-3096

Jeffrey L. Timmons
Irwin, Campbell & Tannenwald, P.C.
1730 Rhode Island Avenue, NW, Suite 200
Washington, D.C. 20036-3101

Marilyn Mohrman-Gillis
Vice-President, Policy & Legal Affairs
Association of America's Public Television Stations
1350 Connecticut Avenue, Suite 200
Washington, D.C. 20036

William K. Keane
Arter & Hadden LLP
1801 K Street, NW, Suite 400K
Washington, D.C. 20006

Deborah Lipoff
Vice President/General Counsel
Rand McNally & Company
8255 North Central Park
Skokie, IL 60076

Jonathan L. Wiener
Goldberg, Godles, Wiener & Wright
1229 Nineteenth Street, NW
Washington, D.C. 20036

William T. Hatch
Acting Associate Administrator
Office of Spectrum Management
U.S. Department of Commerce
National Telecommunications and Information Administration
Washington, D.C. 20230

David R. Siddall
Verner, Liipfert, Bernhard, McPherson & Hand, Chtd.
901 15th Street, NW, Suite 700
Washington, D.C. 20005

Dr. Michael C. Trahos, D.O., NCE, CET-Chairman
Region-20 821 MHz Public Safety Review Committee
Legislative/Regulatory Affairs
4600 King Street, Suite 6K
Alexandria, VA 22302-1249

Mary McDermott, Senior Vice President
Chief of Staff, Government Relations
Personal Communications Industry Association
500 Montgomery Street, Suite 700
Alexandria, VA 22314

Brett Kilbourne
Staff Attorney
UTC
1140 Connecticut Avenue, NW
Suite 1140
Washington, D.C. 20036

Jeffry A. Brueggeman
Senior Attorney
U S WEST, Inc.
1801 California Street, Suite 5100
Denver, CO 80202

Caressa D. Bennet
Bennet & Bennet, PLLC
1000 Vermont Avenue, 10th Floor
Washington, D.C. 20005

Michael R. King
Vice President
Palletized Trucking, Inc.
2001 Collingsworth Street
P.O. Box 8744
Houston, TX 77249-8744

Edgar C. Reihl, P.E.
Shure Brothers Incorporated
Principal RF Engineer & Director, Global Compliance
222 Hartrey Avenue
Evanston, IL 60202-3696

Richard C. Barth
Leigh M. Chinitz
Motorola, Inc.
1350 I Street, NW
Washington, D.C. 20005